

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the Application.

Listing of Claims:

Claims 1-31 (Canceled)

32. (Amended) A spatially unrestricted force-feedback device comprising:

a body;

a plurality of motors, each of said motors capable of imparting an inertial force about an associated axis of rotation and each of said motors connected to said body to provide computer controllable tactile sensations on said body about said associated axis;

a user-interactable member connected to said body, wherein said user-interactable member is in communication with a host computer system modeling a simulated environment including one or more simulated objects, said host computer system commanding said tactile sensations on said body as a function of a simulated activity involving at least one object within said simulated environment; and

a computer mediated controller electrically connected to said motors and in communication with said host computer system, said controller receiving signals from said host computer system and simultaneously controlling each of said motors in response such that said motors produce said inertial forces about said axes, and said controller sending data to said host computer system, said data responsive to user manipulation of said user-interactable member, wherein at least a portion of said computer controllable inertial forces

stabilize said body in at least one spatial dimension to counteract undesired torques produced by at least one of said motors.

33. (Amended) A spatially unrestricted force-feedback device comprising:

a body;

a plurality of motors, each of said motors capable of imparting an inertial force about an associated axis of rotation and each of said motors connected to said body to provide computer controllable tactile sensations on said body about said associated axis;

a user-interactable member connected to said body, wherein said user-interactable member is in communication with a host computer system modeling a simulated environment including one or more simulated objects, said host computer system commanding said tactile sensations on said body as a function of a simulated activity involving at least one object within said simulated environment; and

a computer mediated controller electrically connected to said motors and in communication with said host computer system, said controller receiving signals from said host computer system and simultaneously controlling each of said motors in response such that said motors produce said inertial forces about said axes, and said controller sending data to said host computer system, said data responsive to user manipulation of said user-interactable member, wherein said computer controllable inertial forces stabilize said body in at least one spatial dimension.

Claims 34-35 (Canceled)

36. (Twice Amended) A device comprising:

a body;

a motor having an axis of rotation, said motor operable to impart an inertial force about said axis of rotation, said motor in communication with said body and operable to communicate said inertial force to said body; and

a [[manipulandum]] user-interactable member coupled to said body and in communication with a processor, said processor operable to control said inertial force, wherein said inertial force is operable to stabilize said body in a spatial dimension.

Claim 37 (Canceled)

38. (Amended) A device comprising:

a body;

a first motor having a first axis of rotation, said first motor operable to impart a first inertial force about said first axis of rotation, said first motor in communication with said body and operable to communicate said first inertial force to said body;

a second motor having a second axis of rotation, said second motor operable to impart a second inertial force about said second axis of rotation, said second motor in communication with said body and operable to communicate said second inertial force to said body;

a third motor having a third axis of rotation, said third motor operable to impart a third inertial force about said third axis of rotation, said third motor in communication with said body and operable to communicate said third inertial force to said body; and
a user-interactable member coupled to said body and in communication with a processor, said processor operable to control said inertial forces.

39. (Amended) A device comprising:

a body;
a first motor having a first axis of rotation, said first motor operable to impart a first inertial force about said first axis of rotation, said first motor in communication with said body and operable to communicate said first inertial force to said body;
a second motor having a second axis of rotation, said second motor operable to impart a second inertial force about said second axis of rotation, said second motor in communication with said body and operable to communicate said second inertial force to said body;
a third motor having a third axis of rotation, said third motor operable to impart a third inertial force about said third axis of rotation, said third motor in communication with said body and operable to communicate said third inertial force to said body; and
a user-interactable member coupled to said body and in communication with a processor, said processor operable to control said inertial forces, wherein said second axis is disposed substantially orthogonal to said first axis and said third axis is disposed substantially orthogonal to said first and second axes.